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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/257,108 02/24/99 CHAUDHARI R U-012119-9

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IM22/1205

EXAMINER

ILDEBRANDO, C

ART UNIT

PAPER NUMBER

1754

DATE MAILED:

14
12/05/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/257,108

Applicant(s)

CHAUDHARI ET AL.

Examiner

Christina Ildebrando

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2000 and 26 September 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

DETAILED ACTION

Continued Prosecution Application

1. The request filed on 9/18/00 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/257,108 is acceptable and a CPA has been established. An action on the CPA follows.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-6 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1 and 2 recite the limitation "having an intermediate molar composition before calcination and reduction of about Cu + Cr = 50 mol%, Zn = 20 mol% and Al= 30 mol %." One example in the specification (Example 1) provides for an intermediate composition as recited in claims 1 and 2. However, there does not appear to be support for the specific intermediate composition as claimed which would result in the range of values claimed.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claims 1 and 2 recite the limitation "having an intermediate molar composition before calcination and reduction of about Cu+Cr = 50 mol%, Zn = 20 mol%, and Al = 30 mol%." This limitation renders the claim indefinite because it is not clear how the specific molar composition could result in the range of values claimed.

7. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949).

In the present instance, claim 3 recites the broad recitation "salts of copper such as nitrate, acetate, or chloride", and the claim also recites "preferably copper nitrate" which is the narrower statement of the range/limitation.

Similarly, claim 4 recites the broad recitation "salts of aluminum such as nitrate, acetate, or aluminum oxide", and the claim also recites "preferably aluminum nitrate" which is the narrower statement of the range/limitation. Claim 5 recites the broad recitation "salts of zinc such as nitrate, or zinc sulfate or chloride, or zinc oxide", and the claim also recites "preferably zinc nitrate" which is the narrower statement of the range/limitation.

8. Claim 7 recites the limitation "An improved copper chromite catalyst." This limitation renders the claim indefinite because it is not clear what applicant intends by "improved." It is not clear what is the improvement is or over what the catalyst is an improvement.

9. Claim 8 recites the limitation "recovering and drying the precipitate at a temperature between 200-500°C for a period between 2-5 hours to obtain the catalyst." This limitation renders the claim indefinite because it is not clear whether applicant intends "drying" or "calcining."

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Budge in view of Rashkin.

Budge (US 5,055,599) discloses a catalyst composition useful for the preparation of tetrahydrofuran and gamma-butyrolactone from maleic anhydride or succinic anhydride. The catalyst composition comprises mixed oxides of copper, zinc, and aluminum and preferably further comprises chromium (column 3, lines 38-41). Budge teaches that composition has the general formula $Cu_1Zn_bAl_cM_dO_x$ where M is preferably chromium, $0.001 < b < 500$, $0.001 < c < 500$, and $0 \leq d < 200$, and x is the number of oxygen atoms necessary to satisfy the valency requirements of the other elements (column 3, lines 40-66). It is considered that choosing values within the ranges taught by Budge renders obvious the instantly claimed ranges.

Budge teaches that the catalyst may be prepared by conventional techniques including coprecipitation techniques (column 4, lines 22-25). This technique comprises coprecipitation of an aqueous metal nitrate solution at elevated temperatures with an alkali or ammonium carbonate or bicarbonate (column 4, lines 28-31). The precipitated off, washed, dried at 120 degrees C, and calcined at a temperature of 350-500 degrees C.

Budge does not teach that the source of chromium is either ammonium dichromate or ammonium chromate.

Rashkin (US 4,160,746) discloses a barium promoted copper chromite catalyst composition. Rashkin teaches that the composition may be prepared by coprecipitating the barium, copper, and chromium from an aqueous solution of barium and copper nitrates by the addition of ammonium bichromate (column 2, lines 46-57).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method taught by Budge in light of the teachings of Rashkin. Budge teaches that the catalyst may be prepared by coprecipitation techniques which are known in the art. Rashkin teaches a coprecipitation technique for a catalyst of a similar composition to that taught by Budge using ammonium bichromate. Therefore, one of ordinary skill in the art would have had reasonable expectation of success from the use of ammonium bichromate in the process taught by Budge.

Budge in view of Rashkin does not teach that the catalyst composition has the XRD pattern as shown in Table I of the instant claims. However, since the instantly claimed composition and the catalyst composition of the prior art comprise the same components and are made from the same starting materials by the same methods, one of ordinary skill would expect that the XRD pattern would also be the same.

Response to Arguments

12. Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion


13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hoek et al. (US 4,590,176) discloses a catalyst composition comprising coprecipitates of copper, zinc, chromium and/or aluminum. Refer to columns 2-5.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Ildebrando whose telephone number is (703) 305-0469. The examiner can normally be reached on Monday-Friday, 7:30-5, First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on (703) 308-1164. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-6078 for regular communications and (703) 305-6078 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.


STEVEN P. GRIFFIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700
11/30/00

CAI
November 26, 2000